UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,247	09/15/2000	Ming-chin Chien	CISCP175	3792

22434	7590	04/28/2004

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER
DUONG, FRANK

ART UNIT	PAPER NUMBER
2666	4

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.		Applicant(s)	
Office Action Summary		09/663,247		CHIEN ET AL.	
		Examiner		Art Unit	
		Frank Duong		2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2000*.

2a)☐ This action is **FINAL.**　　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-62* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

1. This Office Action is a response to the Preliminary Amendment dated 9/15/2000.

Claims 1-62 are pending in the application.

Information Disclosure Statement

2. The information disclosure statement filed 5/14/01 complies with the provisions of 37

CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application

file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Chui (USP

6,707,799).

Regarding **claims 1 and 5**, in accordance with Chui reference entirety, Chui

discloses a method for transmitting information over a link in a data network (*FIG. 2 or*

FIG. 3 and col.12, lines 47-49 for software or firmware), the method comprising:

monitoring (48) conditions on the link (VC or 40 or 50) (col. 5, lines 59);

automatically enabling fragmentation (46) on the link upon detecting the

occurrence of a first condition (voice) (col. 5, lines 60-62); and

automatically disabling fragmentation (46) on the link in response to detecting the

occurrence of a second condition (*non-voice or no longer needed condition*) (*col. 5,*

lines 60-62 and col. 6, lines 65-67 and col. 7, lines 55-56) (*also note: at col. 3, lines 27-*

28, Chui discloses fragmentation may be turned on or off, depending on voice

application requirement. Chui further discloses, lines 58-60, fragmentation may be turn

on automatically upon detection of certain format data frames. In addition, at col. 6,

lines 37-40, Chui also discloses fragmentation is established and terminated

dynamically upon detecting certain criteria, for example, according to time-critical voice

or video communication applications. Thus, the recitation thereinafter anticipates the

claimed limitations in a manner as recited).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales

discussed above), Chui further discloses wherein the first condition relates to the

detection of real-time traffic being carried over said link (VC or 40 or 50) (*col. 6, lines*

37-49 or col. 6, line 59).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales

discussed above), Chui further discloses wherein second condition relates to the

detection of no real-time traffic being carried over said link for at least a predetermined

time interval T (*no longer need condition or no voice*) (*col. 6, lines 45-67 and col. 7,*

lines 55-56).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales

discussed above), Chui further discloses if no voice call presents at interface, then

fragmentation is not started (col. 7, lines 55-56). Moreover, at col. 11, line 49 and

thereinafter, Chui discloses dynamic establishment and/or termination of FCP depends

on voice call status. As for the claimed time interval of 60 seconds to 180 seconds, it is

deemed to be a design or engineer choice.

Regarding **claims 6 and 9**, in addition to features recited in base claim 1 (see

rationales discussed above), Chui further discloses wherein said monitoring includes

receiving a first packet (*any packet other than Fragmentation ON Initiated packet*), said

method (*col. 8, line14 to col. 9, line 53 and col. 11, lines 49-58*) further comprising:

determining whether the first packet is associated with real-time traffic (*interface*

receives Fragmentation Off Initiated packet); and

automatically disabling fragmentation on the link after determining that the first

packet is not associated with real-time traffic (*response to receipt Fragmentation Off*

Initiated packet).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales

discussed above), Chui further discloses wherein the automatic disabling of

fragmentation occurs after a predetermined time interval T has elapsed during which

time no packets associated with real-time traffic have been received (*col. 11, line 49 to*

col. 12, lines 40).

Regarding **claim 8**, in addition to features recited in base claim 6 (see rationales

discussed above), Chui further discloses automatically enabling fragmentation on the

link in response to determining that the first packet is associated with real-time packet (*response to Fragmentation ON Initiated*) (*col. 8, line 14 to col. 9, line 53 and col. 11, lines 49-58*).

Regarding **claims 10 and 13**, in addition to features recited in base claim 1 (see rationales discussed above), Chui further discloses dynamic establishment and/or termination of FCP depends on voice call status. When voice calls are terminated locally, VCM 48 has responsibility to inform FCP, via API, of voice call status on specific interface. On being informed of first voice call, FCP initiates fragmentation negotiation with each remote peer, fragmentation is not already in operation. When VCM 48 informs FCP of last voice call termination, FCP attempts to request VC remote peers to terminate fragmentation (col. 11, lines 49-57). Moreover, at col. 8, line 14 to col. 9, line 13, Chui disclose format of the Fragmentation ON, OFF, Disable, Active etc... messages. The recitation thereat anticipated the claimed limitations in a manner set forth as claimed.

Regarding **claim 11**, in addition to features recited in base claim 1 (see rationales discussed above), Chui further discloses wherein the first condition relates to detection of a real-time set-up signal (*Fragmentation ON Initiated message relates to a voice call*) for establishing at least one real-time connection on the link (*col. 8, line 14 to col. 9, line 53 and col. 11, lines 49-58*).

Regarding **claim 12**, in addition to features recited in base claim 1 (see rationales discussed above), Chui further discloses wherein the second condition

relates a determination that no real-time connections are currently established on the

link (*col. 11, lines 49-58*).

Regarding **claims 14 and 24**, in accordance with Chui reference entirety, Chui a

method for transmitting information over a link in a data network (*FIG. 2 or FIG. 3 and

col.12, lines 47-49 for software or firmware*), the method comprising:

configuring the link to include a dynamically adjustable FRAG_SIZE value

relating to a fragmentation size for packets carried on the link such that fragmentation

will be performed on selected packets which have a size greater than the FRAG_SIZE

value (*col. 8, line 21 and thereinafter and col. 9, line 54 and thereinafter*); and

dynamically adjusting the FRAG_SIZE value on the link in response to

predetermined criteria (*col. 8, line 28 and thereinafter*).

Regarding **claim 15**, in addition to features recited in base claim 14 (see

rationales discussed above), Chui further discloses automatically adjusting the

FRAG_SIZE value in response to detecting real-time traffic being carried on the link to

thereby cause fragmentation to effectively be enabled on the link (*col. 8, line 28 and

thereinafter and col. 6, lines 46-61*).

Regarding **claim 16**, in addition to features recited in base claim 15 (see

rationales discussed above), Chui further discloses increasing the FRAG_SIZE value of

the link in response to determining that no real-time traffic has been carried over the link

at least one predetermined time interval T (*col. 8, line 28 and thereinafter and col. 6,

lines 46-61 and col. 9, line 54 and thereinafter*).

Regarding **claim 17**, in addition to features recited in base claim 16 (see rationales discussed above), Chui further discloses continually increasing the FRAG_SIZE value on the link over time so long as no real-time traffic is detected on the link (*col. 9, line 54 to col. 10, line 4*).

Regarding **claim 18**, in addition to features recited in base claim 17 (see rationales discussed above), Chui further discloses limiting the increase the FRAG_SIZE value to a maximum predetermined value which represents a maximum transmission unit size of packets to be carried over the link, thereby effectively disabling fragmentation on the link (*col. 8, lines 14-62*).

Regarding **claim 19**, in addition to features recited in base claim 14 (see rationales discussed above), Chui further discloses wherein the FRAG_SIZE value is increased substantially linearly over time in response to no real-time traffic being detected on the link (*col. 8, lines 14-62*).

Regarding **claim 20**, in addition to features recited in base claim 14 (see rationales discussed above), Chui further discloses wherein the FRAG_SIZE value is increased substantially exponentially over time in response to no real-time traffic being detected on the link (*col. 8, lines 14-62*).

Regarding **claim 21**, in addition to features recited in base claim 1 (see rationales discussed above), Chui further discloses wherein the link includes at least one network device (24-30), and the network device is configured to transmit information over the link using a Frame Relay protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 22**, in addition to features recited in base claim 1 (see

rationales discussed above), Chui further discloses wherein the link includes at least

one network device (24-30), and the network device is configured to transmit

information over the link using a PPP multilink protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 23**, in addition to features recited in base claim 1 (see

rationales discussed above), Chui further discloses wherein the link includes at least

one network device (24-30), and the network device is configured to transmit

information over the link using an ATM protocol (34) (*col. 3, lines 56-62*).

Regarding **claims 25 and 29**, in accordance with Chui reference entirety, Chui

discloses a method for providing adaptive fragmentation of information packets

transmitted over a link in a data network (*FIG. 2 or FIG. 3 and col..12, lines 47-49 for*

software or firmware), the method comprising:

monitoring (48) conditions on the link (VC or 40 or 50) (col. 5, lines 59);

automatically enabling fragmentation (46) on the link upon detecting the

occurrence of a first condition (voice) (col. 5, lines 60-62); and

automatically disabling fragmentation (46) on the link in response to detecting the

occurrence of a second condition (*non-voice or no longer needed condition*) (*col. 5,*

lines 60-62 and col. 6, lines 65-67 and col. 7, lines 55-56) (*also note: at col. 3, lines 27-*

28, Chui discloses fragmentation may be turned on or off, depending on voice

application requirement. Chui further discloses, lines 58-60, fragmentation may be turn

on automatically upon detection of certain format data frames. In addition, at col. 6,

lines 37-40, Chui also discloses fragmentation is established and terminated

dynamically upon detecting certain criteria, for example, according to time-critical voice

or video communication applications. Thus, the recitation thereinafter anticipates the

claimed limitations in a manner as recited).

Regarding **claim 26**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein the first condition relates to

the detection of real-time traffic being carried over said link (VC or 40 or 50) (*col. 6, lines*

37-49 or col. 6, line 59).

Regarding **claim 27**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein second condition relates to

the detection of no real-time traffic being carried over said link for at least a

predetermined time interval T (*no longer need condition or no voice*) (*col. 6, lines 45-67*

and col. 7, lines 55-56).

Regarding **claim 28**, in addition to features recited in base claim 27 (see

rationales discussed above), Chui further discloses if no voice call presents at interface,

then fragmentation is not started (col. 7, lines 55-56). Moreover, at col. 11, line 49 and

thereinafter, Chui discloses dynamic establishment and/or termination of FCP depends

on voice call status. As for the claimed time interval of 60 seconds to 180 seconds, it is

deemed to be a design or engineer choice.

Regarding **claims 30 and 32**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein said monitoring includes

receiving a first packet (*not Fragmentation ON Initiated packet*), said method (*col. 8,*

line14 to col. 9, line 53 and col. 11, lines 49-58) further comprising:

determining whether the first packet is associated with real-time traffic (interface

receives Fragmentation Off Initiated packet); and

automatically disabling fragmentation on the link after determining that the first

packet is not associated with real-time traffic (response to receipt Fragmentation Off

Initiated packet).

Regarding **claim 31**, in addition to features recited in base claim 30 (see

rationales discussed above), Chui further discloses wherein the automatic disabling of

fragmentation occurs after a predetermined time interval T has elapsed during which

time no packets associated with real-time traffic have been received (*col. 11, line 49 to

col. 12, lines 40*).

Regarding **claim 32**, in addition to features recited in base claim 30 (see

rationales discussed above), Chui further discloses automatically enabling

fragmentation on the link in response to determining that the first packet is associated

with real-time packet (*response to Fragmentation ON Initiated*) (*col. 8, line 14 to col. 9,

line 53 and col. 11, lines 49-58*).

Regarding **claim 33**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses dynamic establishment and/or

termination of FCP depends on voice call status. When voice calls are terminated

locally, VCM 48 has responsibility to inform FCP, via API, of voice call status on specific

interface. On being informed of first voice call, FCP initiates fragmentation negotiation

with each remote peer, fragmentation is not already in operation. When VCM 48

informs FCP of last voice call termination, FCP attempts to request VC remote peers to

terminate fragmentation (col. 11, lines 49-57). Moreover, at col. 8, line 14 to col. 9, line

13, Chui disclose format of the Fragmentation ON, OFF, Disable, Active etc...

messages. The recitation thereat anticipated the claimed limitations in a manner set

forth as claimed.

Regarding **claim 34**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein the first condition relates to

detection of a real-time set-up signal (Fragmentation ON Initiated message relates to a

voice call) for establishing at least one real-time connection on the link (*col. 8, line 14 to*

col. 9, line 53 and col. 11, lines 49-58).

Regarding **claim 35**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein the second condition

relates a determination that no real-time connections are currently established on the

link (*col. 11, lines 49-58*).

Regarding **claim 36**, in accordance with Chui reference entirety, Chui a method

for providing adaptive fragmentation of information packets transmitted over a link in a

data network (*FIG. 2 or FIG. 3 and col.12, lines 47-49 for software or firmware*), the

method comprising:

configuring the link to include a dynamically adjustable FRAG_SIZE value

relating to a fragmentation size for packets carried on the link such that fragmentation

will be performed on selected packets which have a size greater than the FRAG_SIZE

value (*col. 8, line 21 and thereinafter and col. 9, line 54 and thereinafter*); and

dynamically adjusting the FRAG_SIZE value on the link in response to predetermined criteria (*col. 8, line 28 and thereinafter*).

Regarding **claim 37**, in addition to features recited in base claim 36 (see rationales discussed above), Chui further discloses automatically adjusting the FRAG_SIZE value in response to detecting real-time traffic being carried on the link to thereby cause fragmentation to effectively be enabled on the link (*col. 8, line 28 and thereinafter and col. 6, lines 46-61*).

Regarding **claim 38**, in addition to features recited in base claim 37 (see rationales discussed above), Chui further discloses increasing the FRAG_SIZE value of the link in response to determining that no real-time traffic has been carried over the link at least one predetermined time interval T (*col. 8, line 28 and thereinafter and col. 6, lines 46-61 and col. 9, line 54 and thereinafter*).

Regarding **claim 39**, in addition to features recited in base claim 38 (see rationales discussed above), Chui further discloses continually increasing the FRAG_SIZE value on the link over time so long as no real-time traffic is detected on the link (*col. 9, line 54 to col. 10, line 4*).

Regarding **claim 40**, in addition to features recited in base claim 39 (see rationales discussed above), Chui further discloses limiting the increase the FRAG_SIZE value to a maximum predetermined value which represents a maximum transmission unit size of packets to be carried over the link, thereby effectively disabling fragmentation on the link (*col. 8, lines 14-62*).

Regarding **claim 41**, in addition to features recited in base claim 36 (see

rationales discussed above), Chui further discloses wherein the FRAG_SIZE value is

increased substantially linearly over time in response to no real-time traffic being

detected on the link (*col. 8, lines 14-62*).

Regarding **claim 42**, in addition to features recited in base claim 36 (see

rationales discussed above), Chui further discloses wherein the FRAG_SIZE value is

increased substantially exponentially over time in response to no real-time traffic being

detected on the link (*col. 8, lines 14-62*).

Regarding **claim 43**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein the link includes at least

one network device (24-30), and the network device is configured to transmit

information over the link using a Frame Relay protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 44**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein the link includes at least

one network device (24-30), and the network device is configured to transmit

information over the link using a PPP multilink protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 45**, in addition to features recited in base claim 25 (see

rationales discussed above), Chui further discloses wherein the link includes at least

one network device (24-30), and the network device is configured to transmit

information over the link using an ATM protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 46**, in accordance with Chui reference entirety, Chui discloses a

network device (FIG. 3) for transmitting information over a link in a data network (*FIG. 2*

or FIG. 3 and col.12, lines 47-49 for software or firmware), the network device

comprising:

at least one CPU (58);

memory (70, 72, 74 and 78);

at least one interface (48, 44 and 46) adapted to communication using the link

(40 or 50); the network device being configured or designed to monitor (48) conditions

on the link (VC or 40 or 50) (col. 5, lines 59); the network device being configured or

designed to automatically enable fragmentation (46) on the link upon detecting the

occurrence of a first condition (voice) (col. 5, lines 60-62); and the network device being

configured or designed to automatically disable fragmentation (46) on the link in

response to detecting the occurrence of a second condition *(non-voice or no longer*

needed condition) *(col. 5, lines 60-62 and col. 6, lines 65-67 and col. 7, lines 55-56)*

(also note: at col. 3, lines 27-28, Chui discloses fragmentation may be turned on or off,

depending on voice application requirement. Chui further discloses, lines 58-60,

fragmentation may be turn on automatically upon detection of certain format data

frames. In addition, at col. 6, lines 37-40, Chui also discloses fragmentation is

established and terminated dynamically upon detecting certain criteria, for example,

according to time-critical voice or video communication applications. Thus, the

recitation thereinafter anticipates the claimed limitations in a manner as recited).

Regarding **claim 47**, in addition to features recited in base claim 46 (see

rationales discussed above), Chui further discloses wherein the first condition relates to

the detection of real-time traffic being carried over said link (VC or 40 or 50) (*col. 6, lines 37-49 or col. 6, line 59*).

Regarding **claim 48**, in addition to features recited in base claim 46 (see rationales discussed above), Chui further discloses wherein second condition relates to the detection of no real-time traffic being carried over said link for at least a predetermined time interval T (*no longer need condition or no voice*) (*col. 6, lines 45-67 and col. 7, lines 55-56*).

Regarding **claim 49**, in addition to features recited in base claim 46 (see rationales discussed above), Chui further discloses the network device is further configured or designed to:

receive a first packet (*any packet other than Fragmentation ON Initiated packet*), said method (*col. 8, line14 to col. 9, line 53 and col. 11, lines 49-58*) further comprising:

determine whether the first packet is associated with real-time traffic (*interface receives Fragmentation Off Initiated packet*); and

automatically disable fragmentation on the link after determining that the first packet is not associated with real-time traffic (*response to receipt Fragmentation Off Initiated packet*).

Regarding **claim 50**, in addition to features recited in base claim 49 (see rationales discussed above), Chui further discloses wherein the automatic disabling of fragmentation occurs after a predetermined time interval T has elapsed during which time no packets associated with real-time traffic have been received (*col. 11, line 49 to col. 12, lines 40*).

Regarding **claim 51**, in addition to features recited in base claim 49 (see

rationales discussed above), Chui further discloses the network device is configured tor

designed to automatically enable fragmentation on the link in response to determining

that the first packet is associated with real-time packet (*response to Fragmentation ON

Initiated*) (*col. 8, line 14 to col. 9, line 53 and col. 11, lines 49-58*).

Regarding **claim 52**, in addition to features recited in base claim 46 (see

rationales discussed above), Chui further discloses dynamic establishment and/or

termination of FCP depends on voice call status. When voice calls are terminated

locally, VCM 48 has responsibility to inform FCP, via API, of voice call status on specific

interface. On being informed of first voice call, FCP initiates fragmentation negotiation

with each remote peer, fragmentation is not already in operation. When VCM 48

informs FCP of last voice call termination, FCP attempts to request VC remote peers to

terminate fragmentation (col. 11, lines 49-57). Moreover, at col. 8, line 14 to col. 9, line

13, Chui disclose format of the Fragmentation ON, OFF, Disable, Active etc...

messages. The recitation thereat anticipated the claimed limitations in a manner set

forth as claimed.

Regarding **claim 53**, in addition to features recited in base claim 46 (see

rationales discussed above), Chui further discloses wherein the first condition relates to

detection of a real-time set-up signal (*Fragmentation ON Initiated message relates to a

voice call*) for establishing at least one real-time connection on the link (*col. 8, line 14 to

col. 9, line 53 and col. 11, lines 49-58*).

Regarding **claim 54**, in addition to features recited in base claim 46 (see

rationales discussed above), Chui further discloses wherein the second condition

relates a determination that no real-time connections are currently established on the

link (*col. 11, lines 49-58*).

Regarding **claim 55**, in addition to features recited in base claim 46 (see

rationales discussed above), Chui further discloses wherein the link is configured to

include a dynamically adjustable FRAG_SIZE value relating to a fragmentation size for

packets carried on the link such that fragmentation will be performed on selected

packets which have a size greater than the FRAG_SIZE value (*col. 8, line 21 and*

thereinafter and col. 9, line 54 and thereinafter); and wherein the network device is

further configured or designed to dynamically adjust the FRAG_SIZE value on the link in

response to predetermined criteria (*col. 8, line 28 and thereinafter*).

Regarding **claim 56**, in addition to features recited in base claim 46 (see

rationales discussed above), Chui further discloses wherein the network device is

further configured or designed to increase the FRAG_SIZE value of the link in response

to determining that no real-time traffic has been carried over the link at least one

predetermined time interval T (*col. 8, line 28 and thereinafter and col. 6, lines 46-61 and*

col. 9, line 54 and thereinafter).

Regarding **claim 57**, in addition to features recited in base claim 56 (see

rationales discussed above), Chui further discloses wherein the network device is

further configured or designed to continually increase the FRAG_SIZE value of the link

in response to determining that no real-time traffic has been carried over the link at least

one predetermined time interval T (*col. 8, line 28 and thereinafter and col. 6, lines 46-61 and col. 9, line 54 and thereinafter*).

Regarding **claim 58**, in addition to features recited in base claim 57 (see rationales discussed above), Chui further discloses wherein the network device is further configured or designed to limit the increase the FRAG_SIZE value to a maximum predetermined value which represents a maximum transmission unit size of packets to be carried over the link, thereby effectively disabling fragmentation on the link (*col. 8, lines 14-62*).

Regarding **claim 59**, in addition to features recited in base claim 46 (see rationales discussed above), Chui further discloses wherein the link includes at least one network device (24-30), and the network device is configured to transmit information over the link using a Frame Relay protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 60**, in addition to features recited in base claim 46 (see rationales discussed above), Chui further discloses wherein the link includes at least one network device (24-30), and the network device is configured to transmit information over the link using a PPP multilink protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 61**, in addition to features recited in base claim 46 (see rationales discussed above), Chui further discloses wherein the link includes at least one network device (24-30), and the network device is configured to transmit information over the link using an ATM protocol (34) (*col. 3, lines 56-62*).

Regarding **claim 62**, in accordance with Chui reference entirety, Chui discloses a system for providing adaptive fragmentation of information packets (FIG. 3) transmitted

over a link of a data network (*FIG. 2 or FIG. 3 and col.12, lines 47-49 for software or firmware*), the system comprising:

      means for monitoring (48) conditions on the link (VC or 40 or 50) (col. 5, lines 59);

      means for automatically enabling fragmentation (46) on the link upon detecting the occurrence of a first condition (voice) (col. 5, lines 60-62);

      means for automatically disabling fragmentation (46) on the link in response to detecting the occurrence of a second condition (*non-voice or no longer needed condition*) (*col. 5, lines 60-62 and col. 6, lines 65-67 and col. 7, lines 55-56*); wherein the first condition relates to the detection of real-time traffic being carried over said link; and wherein the second condition relates to the detection of no real-time traffic being carried over said link (*note: at col. 3, lines 27-28, Chui discloses fragmentation may be turned on or off, depending on voice application requirement. Chui further discloses, lines 58-60, fragmentation may be turn on automatically upon detection of certain format data frames. In addition, at col. 6, lines 37-40, Chui also discloses fragmentation is established and terminated dynamically upon detecting certain criteria, for example, according to time-critical voice or video communication applications. Thus, the recitation thereinafter anticipates the claimed limitations in a manner as recited*).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Baroudi (USP 6,430,196).

Maurya (USP 6,160,808).

Bormann, The Multi-Class Extension to Multi-Link PPP, RFC 2686, pages 1-11,

September 1999.

AF-SAA-0109.000, Multi-service Extension to FUNI v2.0 Specification, pages 2-

14, February 1999.

5. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Frank Duong whose telephone number is (703) 308-

5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Examiner
Art Unit 2666

April 23, 2004